

# Department of Electrical Engineering, IUST

## Selected Publications

### Reverse chronological order, 2013 onwards

| S.No. | Year | Title                                                                                                                                | Journal                                                  | Faculty              |
|-------|------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------|
| 1     | 2024 | Hierarchical deep learning-based adaptive time stepping scheme for multi-scale simulations                                           | Engineering Applications of Artificial Intelligence      | S.A. Nahvi           |
| 2     | 2023 | Deep learning assisted surrogate modeling of large-scale power grids                                                                 | Sustainable Energy, Grids and Networks                   | S.A. Nahvi           |
| 3     | 2023 | Enhanced control designs to abate frequency oscillations in compensated power system                                                 | Energies                                                 | V. Yousuf            |
| 4     | 2022 | Improved power quality operation of symmetrical and asymmetrical multi-level inverter using invasive weed optimization technique     | Energy Reports                                           | S. Ahmad             |
| 5     | 2022 | Low frequency operation and dsPIC micro-controller implementation for multilevel quasi Z-source inverter in photovoltaic application | Distributed Generation & Alternative Energy Journal      | S. Ahmad, A.S. Anees |
| 6     | 2021 | Adaptive predictive control of flywheel storage for transient stability enhancement of a wind penetrated power system                | International Journal of Energy Research                 | M.Y. Zargar          |
| 7     | 2021 | A fast convergent homotopy perturbation method for solving selective harmonics elimination PWM problem in multilevel inverter        | IEEE Access                                              | S. Ahmad             |
| 8     | 2021 | Optimal design and application of fuzzy logic equipped control in STATCOM to abate SSR oscillations                                  | International Journal of Circuit Theory and Applications | V. Yousuf            |
| 9     | 2021 | ADRC-based control strategies to alleviate SSR using STATCOM                                                                         | Electrical Engineering, Springer                         | V. Yousuf            |
| 10    | 2021 | Dynamic performance improvement of isolated power system using intelligently controlled SMES                                         | IET Generation, Transmission & Distribution              | M.Y. Zargar          |
| 11    | 2020 | Adaptive multi-resolution framework for fast simulation of power electronic circuits                                                 | IET Circuits, Devices & Systems                          | S.A. Nahvi           |

|    |      |                                                                                                                                                  |                                                                               |             |
|----|------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------|
| 12 | 2020 | Distributed virtual synchronous generator approach versus singular virtual synchronous generator approach: A dynamic stability evaluation        | Wind Engineering                                                              | M.Y. Zargar |
| 13 | 2020 | Low switching frequency modulation of a $3 \times 3$ matrix converter in UPFC application using differential evolution method                    | International Transactions on Electrical Energy Systems                       | S. Ahmad    |
| 14 | 2019 | Selective harmonics elimination in multilevel inverter by a derivative-free iterative method under varying voltage condition                     | ISA Transactions                                                              | S. Ahmad    |
| 15 | 2019 | Singular perturbation-based model reduction of power electronic circuits                                                                         | IET Circuits, Devices & Systems                                               | S.A. Nahvi  |
| 16 | 2019 | Low-order harmonics control in staircase waveform useful in high-power application by a novel technique                                          | International Transactions on Electrical Energy Systems                       | S. Ahmad    |
| 17 | 2019 | Control of low-order harmonics in a $3 \times 3$ matrix converter using differential evolution approach                                          | International Transactions on Electrical Energy Systems                       | S. Ahmad    |
| 18 | 2019 | Performance analysis of a three-to-five phase dual matrix converter based on space vector pulse width modulation                                 | IEEE Access                                                                   | S. Ahmad    |
| 19 | 2018 | Selective harmonic elimination in a wide modulation range using modified Newton–Raphson and pattern generation methods for a multilevel inverter | Energies                                                                      | S. Ahmad    |
| 20 | 2018 | MATLAB/Simulink-based modelling and performance assessment of wind–diesel energy storage system                                                  | Wind Engineering                                                              | M.Y. Zargar |
| 21 | 2018 | Modelling and performance assessment of a stand-alone hybrid wind–diesel superconducting magnetic energy storage system                          | Wind Engineering                                                              | M.Y. Zargar |
| 22 | 2017 | Adaptive predictive control of a small-capacity SMES unit for improved frequency control of a wind–diesel power system                           | IET Renewable Power Generation                                                | M.Y. Zargar |
| 23 | 2016 | Optimal sizing and location of SPV based multiple distributed generators in distribution systems                                                 | Energy                                                                        | A.S. Anees  |
| 24 | 2013 | Piece-wise quasi-linear approximation for nonlinear model reduction                                                                              | IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems | S.A. Nahvi  |
| 25 | 2013 | Nonlinearity-aware sub-model combination in trajectory-based methods for nonlinear model order reduction                                         | Mathematics and Computers in Simulation                                       | S.A. Nahvi  |
| 26 | 2013 | A lossless switching technique for smart grid applications                                                                                       | International Journal of Electrical Power & Energy Systems                    | A.S. Anees  |